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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/039,374

01/02/2002

Robert C. Glenn

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09/26/2005

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EXAMINER

FILE, ERIN M

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,374

Applicant(s)

GLENN, ROBERT C.

Examiner

Erin M. File

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11, 14, 17, 18, 21, 22, 25 and 27-30 is/are rejected.
- 7) ☐ Claim(s) 4-10, 12, 13, 15, 16, 19, 20, 23, 24 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because on page 25, starting at line 4, the recitation states, "Thus, the interrelated control signals 525 and 545 may comprise ramping amplitudes with substantially equivalent slopes. In particular, charge storage circuitry 516 may have an initial charge at a low amplitude boundary and may rise to a high amplitude boundary at substantially the same rate that the charge level on charge storage circuitry 536 decreases from a high amplitude boundary to a low amplitude boundary." The first sentence of this recitation states that the slopes are substantially equivalent, however, the second sentence indicates that the slopes are the negative inverse of each other. Although the applicant traverses this objection to the inconsistency stating that the examiner is misreading these two sentences, the examiner holds that the definition of slope is clearly defined in the art, and these statements are contradictory. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claims 1, 17, 25, 28 are objected to because of the following informalities: Claims 1, 17, 25, 28, recite a limitation that the a first amplitude increases at a rate

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substantially equivalent to the rate of decrease in the second amplitude. This is in disagreement with "substantially equivalent slopes" (p. 25, line 4) of interrelated control signals 525 and 545. Although the applicant states in the response that the examiner is misinterpreting the statement, the examiner contends that the definition of a slope is clear and well known in the art, and decreasing at the same rate that another is increasing is not a substantially equivalent slope. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 14, 17, 18, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Chao.

Claims 1, 14, 17, 25, Chao discloses first and second control signals (Fig. 1, labels clk-a and clk-b) used to control, along with the bias currents, IA and IB, the increase and decrease in charge. (Col. 5, lines 18-43) Although Chao does not explicitly disclose adjusting the amplitude, the bias currents, IA and IB, are weighted and used to control

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the adjustments along with the control signals, clk a and clk b. The amplitude is adjusted using weighted bias current to adjust the charge. Chao discloses increasing the charge, controlled by clk-a, clk-b, IA and IB, at the same rate as decreasing the charge. Although Chao does not explicitly state an increase and decrease at the same rate, in Figure 6, shows the amplitudes increase and decrease at substantially the same rate. (Fig. 6 and Col. 5, lines 43-65). Further, Chao discloses control signals wherein the phase interpolator adjusts the phase based on the voltage of clk-a and clk-b (Fig. 6, and Col. 5, lines 18-43).

Claims 2, 18, inherits the limitations of Claim 1, Chao further discloses common mode voltage (Vcom) of the phase interpolator block (col. 6, line 41).

Claim 3, inherits the limitations of Claim 2, Chao discloses common mode feedback circuitry to compare the common mode voltage with a reference voltage; and an output coupled to charge circuitry to increase the first amplitude and the second amplitude in response to the common mode voltage being less than the reference voltage, and coupled to discharge circuitry to decrease the first amplitude and the second amplitude in response to the common mode voltage being greater than the reference voltage (col. 6, lines 32-42).

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11, 21, 22, 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao.

Claim 11, inherits the limitations of Claim 1, although Chao does not explicitly disclose charge storage circuitry comprises a capacitance circuit, it is obvious to anyone skilled in the art at the time of invention to use a capacitance circuit for charge storage.

Claims 21, 22, 27, 29, 30, inherits the limitations of Claims 17, 17, 25, 28, 28 respectively, although not explicitly disclosed as charging circuitry to increase the first amplitude; and discharging circuitry to decrease the second amplitude in substantially inverse proportion to an increase in the first amplitude, as Chao discloses a first amplitude increasing at the same rate as a second amplitude decreasing, it must be assumed that some sort of charging and discharging circuitry is necessary.

Claim 28, the limitations of Claim 28 are disclosed by Chao in Claim 1 above, further the preamble claims "machine-readable medium containing instructions, which when executed by a machine, cause said machine to perform operations", however, it would

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be obvious to one skilled in the art at the time of invention to implement instructions on a machine readable medium.

Allowable Subject Matter

7. Claims 4-10, 12, 13, 15, 16, 19, 20, 23, 24, 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File

A handwritten signature in black ink, appearing to be 'EF', written over a horizontal line.

9/16/2005

A large, stylized handwritten signature in black ink, appearing to be 'SC', written over a horizontal line.

STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600